

Listing of Claims:

1 **Claims 1-7 (Canceled)**

1 **Claim 8** (currently amended): An infrared ray lamp
2 comprising: a heating element which is formed of a carbon-
3 based substance including a resistance value adjustment
4 substance and which has having a substantially plate
5 shape, the width of which is larger than its thickness by
6 five times or more,

7 a glass tube in which said heating element is
8 hermetically sealed, and

9 an electrode ~~two electrodes~~ embedded at both end
10 portions of said glass tube, electrically connected to both
11 ends of said heating element respectively and also
12 electrically connected to an external electric circuit.

1 **Claim 9** (currently amended): An infrared ray lamp in
2 accordance with claim 8, further comprising:

3 a two connection devices device secured to both end
4 portions of said heating element respectively and
5 electrically connected to said heating element, and

6 lead wires secured to said connection devices and said
7 electrodes so as to pull both ends of said heating element
8 at a predetermined tension and used to electrically connect

9 said connection devices to said electrodes.

1 **Claim 10** (canceled)

1 **Claim 11** (original): An infrared ray lamp in
2 accordance with claim 8, wherein a reflection film for
3 reflecting infrared rays is provided on the internal or
4 external face of said glass tube so that the emission
5 intensity of said infrared rays emitted from said heating
6 element has a predetermined distribution.

1 **Claim 12** (original): An infrared ray lamp in
2 accordance with claim 11, wherein said reflection film
3 having a semicylindrical shape being substantially coaxial
4 with the center line of said heating element in the
5 longitudinal direction thereof is provided along
6 substantially similar length as that of the infrared ray
7 emitting portion of said heating element.

1 **Claim 13** (original) An infrared ray lamp in accordance
2 with claim 11, wherein the cross section of said reflection
3 film has a shape formed of a part of a parabola having its
4 focus substantially on the center line of said heating
5 element in the longitudinal direction thereof, along
6 substantially similar length as that of the infrared ray
7 emitting portion of said heating element.

1 **Claim 14** (original): An infrared ray lamp in
2 accordance with claim 11, wherein the cross section of said
3 reflection film has a shape formed of a part of an ellipse
4 having one of its focuses substantially on the center line
5 of said heating element in the longitudinal direction
6 thereof, along substantially similar length as that of the
7 infrared ray emitting portion of said heating element.

1 **Claim 15** (original): An infrared ray lamp in
2 accordance with claim 12, wherein the central portion of
3 the cross section of said reflection film is disposed so as
4 to be opposed to the wider side portion of said heating
5 element.

1 **Claim 16** (original): An infrared ray lamp in
2 accordance with claim 12, wherein the central portion of
3 the cross section of said reflection film is disposed so as
4 to be opposed to the narrower side portion of said heating
5 element.

1 **Claim 17** (currently amended): A heating apparatus
2 provided with an infrared ray lamp comprising:
3 a heating element which is formed of a carbon-based
4 substance including a resistance value adjustment
5 substance, and which has having a substantially plate
6 shape, the width of which is larger than its thickness by

7 five times or more,

8 a glass tube in which said heating element is
9 hermetically sealed, and

10 an electrode ~~two electrode~~ embedded at both end
11 portions of said glass tube, electrically connected to both
12 ends of said heating element respectively and also
13 electrically connected to an external electric circuit.

1 **Claim 18** (currently amended): A heating apparatus in
2 accordance with claim 17, wherein said infrared ray lamp
3 further comprises:

4 a two connection devices device secured to both end
5 portions of said heating element respectively and
6 electrically connected to said heating element, and

7 lead wires secured to said connection devices
8 and said electrodes so as to pull both ends of said heating
9 element at a predetermined tension and used to electrically
10 connect said connection devices to said electrodes.

1 **Claim 19** (original): A heating apparatus in accordance
2 with claim 17 or 18, further comprising a reflection plate
3 for reflecting infrared rays so that the intensity of said
4 infrared rays emitted from said heating element has
5 a predetermined directional distribution.

1 **Claim 20** (original): A heating apparatus in accordance
2 with claim 18, wherein said reflection plate has a
3 semi-cylindrical shape being substantially coaxial with the
4 center axis of said infrared ray lamp.

1 **Claim 21** (original): A heating apparatus in
2 accordance with claim 18, wherein the cross section of said
3 reflection plate has a shape formed of a part of a parabola
4 having its focus substantially on the center axis of said
5 infrared ray lamp.

1 **Claim 22** (original): A heating apparatus in
2 accordance with claim 18, wherein the cross section of said
3 reflection plate has a shape formed of a part of an ellipse
4 having one of its focuses substantially on the center axis
5 of said infrared ray lamp.

1 **Claim 23** (original): A heating apparatus in
2 accordance with claim 19, wherein the central portion of
3 the cross section of said reflection plate is disposed so
4 as to be opposed to the wider side portion of said heating
5 element.

1 **Claim 24** (original): A heating apparatus in accordance
2 with claim 19, wherein the central portion of the cross
3 section of said reflection plate is disposed so as to be

4 opposed to the narrower side portion of said heating
5 element.

1 **Claim 25** (currently amended): A method of producing an
2 infrared ray lamp, comprising:

3 a step of forming a glass tube by forming glass into
4 a substantially cylindrical shape,

5 a step of hermetically sealing a substantially plate
6 heating element, the width of which is larger than its
7 thickness by five times or more, inside said glass tube so
8 that the center line of said heating element in the
9 longitudinal direction thereof is substantially coaxial
10 with the center axis of said glass tube, and

11 a step of forming a reflection film for reflecting
12 infrared rays into a substantially semicylindrical shape on
13 the external face of the cylindrical shape of said glass
14 tube so as to substantially include the range of the
15 disposition of said heating element in the axial direction
16 thereof.

1 **Claim 26** (original) A method of producing an infrared
2 ray lamp, comprising:

3 a step of forming a glass tube by forming glass into
4 a substantially cylindrical shape,

5 a step of forming a reflection film for reflecting
6 infrared rays into a predetermined substantially
7 semi-cylindrical shape on the external face or the internal

8 face of the cylindrical shape of said glass tube, and
9 a step of disposing a substantially plate heating
10 element, the width of which is larger than its thickness by
11 five times or more, so as to be included in the axial range
12 wherein said reflection film is disposed, and of
13 hermetically sealing said heating element inside said glass
14 tube.

1 **Claim 27** (New) An infrared ray lamp comprising:
2 a heating element having a substantially plate shape,
3 the width of which is larger than its thickness by five
4 times or more,
5 a heat emitting block which is formed of a conductive
6 material and electrically connected to one end of said
7 heating element,
8 a glass tube in which said heating element is
9 hermetically sealed, and
10 an electrode embedded at both end portions of said
11 glass tube, electrically connected to both ends of said
12 heating element respectively and also electrically
13 connected to an external electric circuit.

1 **Claim 28** (new) A heating apparatus provided with an
2 infrared ray lamp comprising,
3 a heating element having a substantially plate shape,
4 the width of which is larger than its thickness by five

5 times or more,

6 a heat emitting block which is formed of conductive

7 material and electrically connected to one end of said

8 heating element,

9 a glass tube in which said heating element

10 is hermetically sealed, and

11 an electrode embedded at both end portions of

12 said glass tube, electrically connected to both ends of

13 said heating element respectively and also electrically

14 connected to an external electric circuit.